TECHNICAL INFORMATION

Recommended Hole Sizes for Inch Thread Forming Taps

Tap Size	NC, NF NS	CLASS 2B H Tol.	Hole Size 75%*	65%*	55%*	CLASS 3B H Tol.	Hole Size 75%	65%	55%
0 – 80	NF	3	.0542	.0548	.0554	3	.0539	.0545	.0551
1 – 64	NC	4	.0657	.0664	.0672	3	.0653	.0660	.0668
1 – 72	NF	4	.0665	.0671	.0678	3	.0662	.0668	.0675
2 – 56	NC	4	.0776	.0783	.0792	3	.0772	.0779	.0788
2 – 64	NF	4	.0787	.0794	.0802	3	.0784	.0791	.0799
3 – 48	NC	4	.0890	.0899	.0909	3	.0886	.0895	.0905
3 – 56	NF	4	.0905	.0913	.0922	3	.0901	.0909	.0918
4 – 40	NC	4	.0999	.1009	.1022	3	.0995	.1005	.1018
4 – 48	NF	4	.1020	.1029	.1039	3	.1016	.1025	.1035
5 – 40	NC	4	.1128	.1139	.1151	4	.1124	.1135	.1147
5 – 44	NF	4	.1141	.1149	.1161	3	.1137	.1145	.1157
6 – 32	NC	5	.1226	.1239	.1255	4	.1221	.1234	.1250
6 – 40	NF	4	.1259	.1269	.1282	4	.1254	.1264	.1277
8 – 32	NC	5	.1486	.1499	.1515	4	.1481	.1494	.1510
8 – 36	NF	5	.1504	.1516	.1530	4	.1499	.1511	.1525
10 – 24	NC	5	.1691	.1709	.1729	4	.1686	.1704	.1724
10 – 32	NF	5	.1745	.1759	.1775	4	.1740	.1754	.1770
12 – 24	NC	5	.1951	.1969	.1990	4	.1945	.1963	.1984

*Probable percent of full thread produced in tapped hole when using these drilled hole sizes.

Tap Size	NC, NF NS	CLASS 2B H Tol.	Hole Size 75%*	65%*	55%*	CLASS 3B H Tol.	Hole Size 75%	65%	55%
12 – 28	NF	5	.1983	.1998	.2016	4	.1977	.1992	.2010
1/4 – 20	NC	6	.2248	.2269	.2294	5	.2242	.2263	.2288
1/4 – 28	NF	5	.2322	.2337	.2356	4	.2317	.2332	.2351
5/16 – 18	NC	6	.2843	.2867	.2894	5	.2836	.2860	.2887
5/16 – 24	NF	6	.2916	.2934	.2955	5	.2910	.2928	.2949
3/8 – 16	NC	7	.3431	.3458	.3489	5	.3424	.3451	.3482
3/8 – 24	NF	6	.3540	.3558	.3580	5	.3534	.3552	.3574
7/16 – 14	NC	7	.4006	.4039	.4075	6	.3999	.4032	.4068
7/16 – 20	NF	6	.4122	.4144	.4169	5	.4115	.4137	.4162
1/2 – 13	NC	8	.4604	.4637	.4676	6	.4596	.4629	.4668
1/2 – 20	NF	7	.4747	.4769	.4795	5	.4740	.4762	.4788
9/16 – 12	NC	8	.5193	.5230	.5273	6	.5184	.5221	.5264
9/16 – 18	NF	7	.5342	.5367	.5395	5	.5335	.5360	.5388
5/8 – 11	NC	8	.5780	.5819	.5866	6	.5771	.5810	.5857
5/8 – 18	NF	7	.5968	.5992	.6021	6	.5960	.5984	.6013
3/4 – 10	NC	9	.6979	.7023	.7074	7	.6969	.7013	.7064
3/4 – 16	NF	8	.7181	.7208	.7241	6	.7173	.7200	.7233

Recommended Hole Sizes for Metric Thread Forming Taps

Tap Size	6H	Probable Drill Size
M2 x 0.4	D 5	1.85 mm
M2.5 x 0.45	D 6	2.35 mm
M3 x 0.5	D 6	2.80 mm
M3.5 x 0.6	D 7	3.25 mm
M4 x 0.7	D 7	3.70 mm
M5 x 0.8	D 8	4.70 mm
M6 x 1.0	D 9	5.50 mm
M8 x 1.25	D10	7.40 mm
M10 x 1.5	D11	9.25 mm

S.T.I. Tap Drill Sizes

Coarse

METRIC Nominal Thread Size	Aluminum	Steel Magnesium Plastic	INCH Nominal Thread Size	Aluminum	Steel Magnesium Plastic
M2.2 x 0.45	#42	#42	2 (.086)-56	3/32	#41
M2.5 x 0.45	#37	#37	3 (.099)-48	#36	7/64
M 3 x 0.5	1/8	1/8	4 (.112)-40	#31	#31
M3.5 x 0.6	#27	#26	5 (.125)-40	3.4 mm	#29
M 4 x 0.7	#19	#19	6 (.138)-32	#26	#25
M 5 x 0.8	#5	#4	8 (.164)-32	#17	#16
M 6 x 1	D	1/4	10 (.190)-24	13/64	#5
M 7 x 1	L	L	12 (.216)-24	#1	#1
M 8 x 1.25	21/64	Q	1/4 (.2500)-20	H	H
M10 x 1.5	Z	Z	5/16 (.3125)-18	Q	Q
M12 x 1.75	31/64	1/2	3/8 (.3750)-16	X	X
M14 x 2	37/64	37/64	7/16 (.4375)-14	29/64	29/64
M16 x 2	21/32	21/32	1/2 (.5000)-13	33/64	17/32
M18 x 2.5	47/64	47/64	9/16 (.5625)-12	37/64	19/32
M20 x 2.5	13/16	13/16	5/8 (.6250)-11	21/32	21/32
M22 x 2.5	57/64	57/64	3/4 (.7500)-10	25/32	25/32
M24 x 3	63/64	63/64	7/8 (.8750)-9	29/32	29/32
M27 x 3	1-3/32	1-3/32	1 (1.0000)-8	1-1/32	1-1/32
M30 x 3.5	1-7/32	1-7/32	1-1/8 (1.1250)-7	1-11/64	1-11/64
M33 x 3.5	1-11/32	1-11/32	1-1/4 (1.2500)-7	1-19/64	1-19/64
M36 x 4	1-29/64	1-15/32	1-3/8 (1.3750)-6	1-27/64	1-27/64
M39 x 4	1-37/64	1-37/64	1-1/2 (1.5000)-6	1-35/64	1-35/64

Fine

METRIC Nominal Thread Size	Aluminum	Steel Magnesium Plastic	INCH Nominal Thread Size	Aluminum	Steel Magnesium Plastic
M 8 x 1	21/64	21/64	3 (.099)-56	#37	#36
M10 x 1	Y	13/32	4 (.112)-48	3 mm	#31
M10 x 1.25	Y	13/32	6 (.138)-40	#26	#25
M12 x 1.25	31/64	31/64	8 (.164)-36	#17	#16
M12 x 1.5	31/64	1/2	10 (.190)-32	#7	13/64
M14 x 1.5	9/16	37/64	1/4 (.2500)-28	G	6.7 mm
M16 x 1.5	41/64	21/32	5/16 (.3125)-24	21/64	21/64
M18 x 1.5	23/32	47/64	3/8 (.3750)-24	25/64	25/64
M20 x 1.5	51/64	13/16	7/16 (.4375)-20	29/64	29/64
M22 x 1.5	7/8	57/64	1/2 (.5000)-20	33/64	33/64
M18 x 2	47/64	47/64	9/16 (.5625)-18	37/64	37/64
M20 x 2	13/16	13/16	5/8 (.6250)-18	41/64	41/64
M22 x 2	57/64	57/64	3/4 (.7500)-16	49/64	49/64
M24 x 2	31/32	31/32	7/8 (.8750)-14	57/64	57/64
M27 x 2	1-5/64	1-3/32	1 (1.0000)-14	1-1/64	1-1/32
M30 x 2	1-13/64	1-13/64	1 (1.0000)-12	1-1/64	1-1/32
M33 x 2	1-5/16	1-21/64	1-1/8 (1.1250)-12	1-9/64	1-5/32
M36 x 2	1-7/16	1-7/16	1-1/4 (1.2500)-12	1-17/64	1-9/32
M39 x 2	1-35/64	1-9/16	1-3/8 (1.3750)-12	1-25/64	1-13/32
M36 x 3	1-29/64	1-29/64	1-1/2 (1.5000)-12	1-33/64	1-17/32
M39 x 3	1-9/16	1-9/16	—	—	—

Decimal Equivalents

Fractional, Number, Letter and Metric Sizes Recommended Tap Drill Sizes Based on Approximately 75% Thread

Inch	Decimal	Wire	mm	Tap sizes to be used with drills as indicated
	.0059	97	.15	
	.0063	96	.16	
	.0067	95	.17	
	.0071	94	.18	
	.0075	93	.19	
	.0079	92	.20	
	.0083	91	.21	
	.0087	90	.22	
	.0091	89	.23	
	.0094		.24	
	.0095	88		
	.0098		.25	
	.0100	87		
	.0102		.26	
	.0105	86		
	.0106		.27	
	.0110	85	.28	
	.0114		.29	
	.0115	84		
	.0118		.30	
	.0120	83		
	.0125	82		
	.0126		.32	
	.0130	81		
	.0134		.34	
	.0135	80		
	.0138		.35	
	.0142		.36	
	.0145	79		
	.0150		.38	
1/64	.0156			
	.0157		.40	
	.0160	78		
	.0165		.42	
	.0173		.44	
	.0177		.45	
	.0180	77		
	.0181		.46	
	.0189		.48	
	.0197		.50	
	.0200	76		
	.0210	75		
	.0217		.55	
	.0225	74		
	.0236		.60	
	.0240	73		
	.0250	72		
	.0256		.65	
	.0260	71		
	.0276		.70	
	.0280	70		
	.0292	69		
	.0295		.75	
	.0310	68		
1/32	.0312			
	.0315		.80	
	.0320	67		
	.0330	66		
	.0335		.85	
	.0350	65		
	.0354		.90	
	.0360	64		
	.0370	63		
	.0374		.95	
	.0380	62		
	.0390	61		
	.0394		1.00	
	.0400	60		
	.0410	59		
	.0413		1.05	
	.0420	58		
	.0430	57		
	.0433		1.10	
	.0453		1.15	
	.0465	56		0-80
3/64	.0469			
	.0472		1.20	
	.0492		1.25	
	.0512		1.30	
	.0520	55		
	.0531		1.35	
	.0550	54		1-64NC
	.0551		1.40	
	.0571		1.45	
	.0591		1.50	
	.0595	53		1-72NF
	.0610		1.55	
1/16	.0625			
	.0630		1.60	
	.0635	52		
	.0650		1.65	
	.0669		1.70	
	.0670	51		2-56NC
	.0689		1.75	
	.0700	50		2-64NF
	.0709		1.80	
	.0728		1.85	
	.0730	49		
	.0748		1.90	
	.0760	48		3-48
	.0768		1.95	
5/64	.0781			
	.0785	47		
	.0787		2.00	
	.0807		2.05	
	.0810	46		3-56NF
	.0820	45		
	.0827		2.10	
	.0846		2.15	
	.0860	44		4-40NC
	.0866		2.20	
	.0886		2.25	
	.0890	43		
	.0906		2.30	
	.0925		2.35	
	.0935	42		4-48NF
3/32	.0938			
	.0945		2.40	
	.0960	41		
	.0965		2.45	
	.0980	40		5-40NC
	.0984		2.50	
	.0995	39		
	.1015	38		5-44NF
	.1024		2.60	
	.1040	37		
	.1063		2.70	
	.1065	36		6-32NC
	.1083		2.75	
7/64	.1094			
	.1100	35		
	.1102		2.80	
	.1110	34		6-40NF
	.1130	33		
	.1142		2.90	
	.1160	32		
	.1181		3.00	
	.1200	31		
	.1220		3.10	
1/8	.1250			
	.1260		3.20	
	.1280		3.25	
	.1285	30		
	.1299		3.30	
	.1339		3.40	
	.1360	29		6-32
	.1378		3.50	
	.1405	28		
9/64	.1406			
	.1417		3.60	
	.1440	27		
	.1457		3.70	
	.1470	26		10-24NC
	.1476		3.75	
	.1495	25		
	.1496		3.80	
	.1520	24		
	.1535		3.90	
	.1540	23		
5/32	.1562			
	.1570	22		
	.1575		4.00	
	.1590	21		
	.1610	20		
	.1614		4.10	
	.1654		4.20	
	.1660	19		
	.1673		4.25	
	.1693		4.30	
	.1695	18		
11/64	.1719			
	.1730	17		
	.1732		4.40	
	.1770	16		
	.1772		4.50	
	.1800	15		
	.1811		4.60	
	.1820	14		
	.1850	13	4.70	
	.1870		4.75	
3/16	.1875			
	.1890		4.80	
	.1890	12		
	.1910	11		
	.1929		4.90	
	.1935	10		
	.1960	9		
	.1969		5.00	
	.1990	8		
	.2008		5.10	
	.2010	7		
13/64	.2031			
	.2040	6		
	.2047		5.20	
	.2055	5		
	.2067		5.25	
	.2087		5.30	
	.2090	4		
	.2126		5.40	
	.2130	3		
	.2165		5.50	
7/32	.2188			
	.2205		5.60	
	.2210	2		
	.2244		5.70	
	.2264		5.75	
	.2280	1		
	.2283		5.80	
	.2323		5.90	
	.2340	A		
15/64	.2344			
	.2362		6.00	
	.2380	B		
	.2402		6.10	
	.2420	C		
	.2441		6.20	
	.2460	D		
	.2461		6.25	
	.2480		6.30	
1/4	.2500	E		
	.2520		6.40	
	.2559		6.50	
	.2570	F		
	.2598		6.60	
	.2610	G		
	.2638		6.70	
17/64	.2656			
	.2657		6.75	
	.2660	H		
	.2677		6.80	
	.2717		6.90	
	.2720	I		
	.2756		7.00	
	.2770	J		
	.2795		7.10	
	.2810	K		
	.2812			
	.2835		7.20	
	.2854		7.25	
	.2874		7.30	
	.2900	L		
	.2913		7.40	
	.2950	M		
	.2953		7.50	
	.2969			
	.2992		7.60	
	.3020	N		
	.3031		7.70	
	.3051		7.75	
	.3071		7.80	
	.3110		7.90	
	.3125			
	.3150		8.00	
	.3160	O		
	.3189		8.10	
	.3228		8.20	
	.3230	P		
	.3248		8.25	
	.3268		8.30	
	.3281			
	.3307		8.40	
	.3320	Q		
	.3346		8.50	
	.3386		8.60	
	.3390	R		
	.3425		8.70	
	.3438			
	.3445		8.75	
	.3465		8.80	
	.3480	S		
	.3504		9.80	
	.3543		9.00	
	.3580	T		
	.3583		9.10	
	.3594			
	.3622		9.20	
	.3642		9.25	
	.3661		9.30	
	.3680	U		
	.3701		9.40	
	.3740		9.50	
	.3750			
	.3770	V		
	.3780		9.60	
	.3819		9.70	
	.3839		9.75	
	.3858		9.80	
	.3860	W		
	.3898		9.90	
	.3906			
	.3937		10.0	
	.3970	X		
	.4040	Y		
	.4062			
	.4130	Z		
	.4134		10.5	
	.4219			
	.4330		11.0	
	.4375			
	.4528		11.5	
	.4531			
	.4688			
	.4724		12.0	
	.4844			
	.4921		12.5	
	.5000		12.7	
	.5118		13.0	
	.5156			
	.5312			
	.5315		13.5	
	.5469			
	.5512		14.0	
	.5625			
	.5709		14.5	
	.5781			
	.5906		15.0	
	.5938			
	.6094			
	.6102		15.5	
	.6250			
	.6299		16.0	
	.6406			
	.6496		16.5	
	.6562			
	.6693		17.0	
	.6719			
	.6875			
	.6890		17.5	
	.7031			
	.7087		18.0	
	.7188			
	.7283		18.5	
	.7344			
	.7480		19.0	
	.7500			
	.7656			
	.7677		19.5	
	.7812			
	.7874		20.0	
	.7969			
	.8071		20.5	
	.8125			
	.8268		21.0	
	.8281			
	.8438			
	.8465		21.5	
	.8594			
	.8661		22.0	
	.8750			
	.8858		22.5	
	.8906			
	.9055		23.0	
	.9062			
	.9219			
	.9252		23.5	
	.9375			
	.9449		24.0	
	.9531			
	.9646		24.5	
	.9688			
	.9843		25.0	
	.9844			
	1.0000			
	1.0039		25.5	
	1.0156			
	1.0236		26.0	
	1.0312			
	1.0433		26.5	
	1.0469			
	1.0625			
	1.0630		27.0	
	1.0781			
	1.0827		27.5	
	1.0938			
	1.1024		28.0	
	1.1094			
	1.1220		28.5	
	1.1250			
	1.1406			
	1.1417		29.0	
	1.1562			
	1.1614		29.5	
	1.1719			
	1.1811			
	1.1875		30.0	
	1.1969			
	1.2031		30.5	
	1.2188			
	1.2205		31.0	
	1.2344			
	1.2362		31.5	
	1.2500			
	1.2598		32.0	
	1.2656			
	1.2795		32.5	
	1.2812			
	1.2969		33.0	
	1.3125			
	1.3189		33.5	
	1.3281			
	1.3386		34.0	
	1.3438			
	1.3583		34.5	
	1.3594			
	1.3740		35.0	
	1.3750			
	1.3898		35.5	
	1.3906			
	1.4062		36.0	
	1.4219			
	1.4375		36.5	
	1.4531			
	1.4688		37.0	
	1.4844			
	1.5000		37.5	
	1.5156			
	1.5312		38.0	
	1.5469			
	1.5625		38.5	
	1.5781			
	1.5938		39.0	
	1.6094			
	1.6250		39.5	
	1.6406			
	1.6562		40.0	
	1.6719			
	1.6875		40.5	
	1.7031			
	1.7188		41.0	
	1.7344			
	1.7500		41.5	
	1.7656			
	1.7812		42.0	
	1.7969			
	1.8125		42.5	
	1.8281			
	1.8438		43.0	
	1.8594			
	1.8750		43.5	
	1.8906			
	1.9062		44.0	
	1.9219			
	1.9375		44.5	
	1.9531			
	1.9688		45.0	
	1.9844			
	2.0000		45.5	
	2.0156			
	2.0312		46.0	
	2.0469			
	2.0625		46.5	
	2.0781			
	2.0938		47.0	
	2.1094			
	2.1250		47.5	
	2.1406			
	2.1562		48.0	
	2.1719			
	2.1875		48.5	
	2.2031			
	2.2188		49.0	
	2.2344			
	2.2500		49.5	
	2.2656			
	2.2812		50.0	
	2.2969			
	2.3125		50.5	
	2.3281			
	2.3438		51.0	
	2.3594			
	2.3750		51.5	
	2.3906			
	2.4062		52.0	
	2.4219			
	2.4375		52.5	
	2.4531			
	2.4688		53.0	
	2.4844			
	2.5000		53.5	
	2.5156			
	2.5312		54.0	
	2.5469			
	2.5625		54.5	
	2.5781			
	2.5938		55.0	
	2.6094			
	2.6250		55.5	
	2.6406			
	2.6562		56.0	
	2.6719			
	2.6875		56.5	
	2.7031			
	2.7188		57.0	
	2.7344			
	2.7500		57.5	
	2.7656			
	2.7812		58.0	
	2.7969			
	2.8125		58.5	
	2.8281			
	2.8438		59.0	
	2.8594			
	2.8750		59.5	
	2.8906			
	2.9062		60.0	
	2.9219			
	2.9375		60.5	
	2.9531			
	2.9688		61.0	
	2.9844			
	3.0000		61.5	
	3.0156			
	3.0312		62.0	
	3.0469			
	3.0625		62.5	
	3.0781			
	3.0938		63.0	
	3.1094			
	3.1250		63.5	
	3.1406			
	3.1562		64.0	
	3.1719			
	3.1875		64.5	
	3.2031			
	3.2188		65.0	
	3.2344			
	3.2500		65.5	
	3.2656			
	3.2812		66.0	
	3.2969			
	3.3125		66.5	
	3.3281			
	3.3438		67.0	
	3.3594			
	3.3750		67.5	
	3.3906			
	3.4062		68.0	
	3.4219			
	3.4375		68.5	
	3.4531			
	3.4688		69.0	
	3.4844			
	3.5000		69.5	
	3.5156			
	3.5312		70.0	
	3.5469			
	3.5625		70.5	
	3.5781			
	3.5938		71.0	
	3.6094			
	3.6250		71.5	
	3.6406			
	3.6562		72.0	
	3.6719			
	3.6875		72.5	
	3.7031			
	3.7188		73.0	
	3.7344			
	3.7500		73.5	
	3.7656			
	3.7812		74.0	
	3.7969			
	3.8125		74.5	
	3.8281			
	3.8438		75.0	
	3.8594			
	3.8750		75.5	
	3.8906			
	3.9062		76.0	
	3.9219			
	3.9375		76.5	
	3.9531			
	3.9688		77.0	
	3.9844			
	4.0000		77.5	
	4.0156			
	4.0312		78.0	
	4.0469			
	4.0625		78.5	
	4.0781			
	4.0938		79.0	
	4.1094			
	4.1250		79.5	
	4.1406			
	4.1562		80.0	
	4.1719			
	4.1875		80.5	
	4.2031			
	4.2188		81.0	
	4.2344			
	4.2500		81.5	
	4.2656			
	4.2812		82.0	
	4.2969			
	4.3125		82.5	
	4.3281			
	4.3438		83.0	
	4.3594			
	4.3750		83.5	
	4.3906			
	4.4062		84.0	
	4.4219			
	4.4375		84.5	
	4.4531			
	4.4688		85.0	
	4.4844			
	4.5000		85.5	
	4.5156			
	4.5312		86.0	
	4.5469			
	4.5625		86.5	
	4.5781			
	4.5938		87.0	
	4.6094			
	4.6250		87.5	
	4.6406			
	4.6562		88.0	
	4.6719			
	4.6875		88.5	
	4.7031			
	4.7188		89.0	
	4.7344			
	4.7500		89.5	
	4.7656			
	4.7812		90.0	
	4.7969			
	4.8125		90.5	
	4.8281			
	4.8438		91.0	
	4.8594			
	4.8750		91.5	
	4.8906			
	4.9062		92.0	
	4.9219			
	4.9375		92.5	
	4.9531			
	4.9688		93.0	
	4.9844			
	5.0000		93.5	
	5.0156			
	5.0312		94.0	
	5.0469			
	5.0625		94.5	
	5.0781			
	5.0938		95.0	
	5.1094			
	5.1250		95.5	
	5.1406			
	5.1562		96.0	
	5.1719			
	5.1875		96.5	
	5.2031			
	5.2188		97.0	
	5.2344			
	5.2500		97.5	
	5.2656			
	5.2812		98.0	
	5.2969			
	5.3125		98.5	
	5.3281			
	5.3438		99.0	
	5.3594			
	5.3750		99.5	
	5.3906			
	5.4062		100.0	

Tap sizes to be used with drills as indicated
9/16-18NF
5/8-11NC
5/8-18NF
3/8-18 Pipe
11/16-16NS
3/4-10NC
3/4-16NF
7/8-9NC
7/8-14NF
1-8NC
3/4-14 Pipe
1-14NF
1-1/8-7NC
1-1/8-12NF
1-1/4-7NC
1-11-1/2 Pipe
1-1/4-12NF